

## REMARKS

Applicants request favorable reconsideration and allowance of the subject application in view of the preceding amendments and the following remarks.

Claims 1 through 17 are now presented for examination. Claims 1 through 8 have been cancelled without prejudice or disclaimer of subject matter. Claims 9 through 17 have been added to assure Applicants of the full measure of protection to which they deem themselves entitled. Claims 9 and 16 are the only independent claims. Support for the claims can be found in the original application, as filed. Therefore, no new matter has been added.

The specification and the abstract have been carefully reviewed and amended as to matters of form. The specification has been amended to correct typographical errors.

Cancelled Claims 1-8 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent 5,760,411 (Kawakubo). With regard to new Claims 9 through 17, this rejection is respectfully traversed.

New independent Claim 9 is directed to a position detection method that detects the position of a mark. According to the method, light from the mark is detected under a first detecting condition to obtain a position of the mark as a first position. Light from the mark is detected under a second condition different from the first condition to obtain a position of the mark as a second position. Offset data that offsets one of the first and second positions is obtained based on previously prepared information relating the first and second positions to the offset data. The position of the mark is detected based on the offset data and one of the first and second positions.

New independent Claim 16 is directed to exposure apparatus that transfers a pattern to a workpiece. In the apparatus, a first position detecting unit detects light from a mark on the workpiece under a first detecting position to obtain a position of the mark as a first position. A second position detecting unit detects light from a mark on the workpiece under a second detecting position to obtain a position of the mark as a second position. An offset data unit obtains offset data that offsets one of the first and second positions based on previously prepared information relating the first and second positions to the offset data. A position detecting unit detects the position of the mark based on the offset data and one of the first and second positions. An aligning unit aligns the workpiece based on the position of the mark detected by the position detecting unit.

Kawakubo discloses an alignment method that positions plural shot areas on a substrate in which two laser beams with a frequency difference are applied to a wafer mark on a wafer from an LIA (Laser Interferometric Alignment) system through a projection optical system. Diffracted light beams generated from the wafer mark are received by first to third light-receiving devices, respectively, in the LIA. The first light-receiving device receives first interference light comprising  $\pm 1$ st-order diffracted light beams (first processing mode). The second and third light-receiving devices respectively receive second and third interference lights comprising zeroth-order light and 2nd-order diffracted light (second processing mode). Alignment is effected by using either of the two processing modes which gives better measurement reproducibility.

According to the invention defined in new Claims 9 and 16, offset data for offsetting one of a first position that detects light from a mark under a first detecting condition and a second

position that detects light from the mark under a second detecting condition based on previously prepared information relating the first and second positions to the offset data. The position of the mark is detected based on the offset data and one of the first and second positions.

Kawakubo may disclose (e.g., at lines 7 through 24 of column 3) measuring the coordinate position of each of the selected sample shots in a stationary coordinate system by using each of plural processing modes of a predetermined alignment system. The dispersion of the measurement results of each processing mode is calculated and the processing mode in which the dispersion of measurement results is the smallest is selected from among the plural of the processing modes based the calculation results. Plural shot areas are aligned on the basis of the selected processing mode.

In contrast to Kawakubo's selection of one of plural processing modes, it is a feature of Claims 9 and 16 that offset data for offsetting one of a first mark position detected under a first light detecting condition and a second mark position detected under a second light detecting condition is obtained based on previously prepared information relating the first and second positions to the offset data and another feature that the mark position is detected based on the offset data and one of the first and second positions. Accordingly, Kawakubo is directed away from and fails to teach or suggest anything concerning the use of offset data based on previously prepared information relating such first and second different light condition mark positions and one of the first and second mark positions to detect the position of the mark as in Claims 9 and 16. It is therefore believed that new Claims 9 and 16 are completely distinguished from Kawakubo and are allowable.


For the reasons noted above, Applicant submits that the present invention, as recited in independent claims 9 and 16, also is patentably defined over the cited art.

Dependent claims 10 through 15 and 17 also should be deemed allowable, in their own right, for defining other patentable features of the present invention in addition to those recited in their respective independent claims. Further individual consideration of these dependent claims is requested.

Applicant further submits that the instant application is in condition for allowance. Favorable reconsideration, withdrawal of the rejection set forth in the above-noted Office Action and an early Notice of Allowance are requested.

Applicants' attorney, Steven E. Warner, may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should be directed to our address listed below.

Respectfully submitted,

  
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